A.  Create a letter of transmittal and a project proposal to convince senior, nontechnical managers and executives to implement your data product approved in Task 1. The proposal should include *each* of the following:

•   a summary of the problem

•   a description of how the data product benefits the customer and supports the decision-making process

•   an outline of the data product

•   a description of the data that will be used to construct the data product

•   the objectives and hypotheses of the project

•   an outline of the project methodology

•   funding requirements

•   the impact of the solution on stakeholders

•   ethical and legal considerations and precautions that will be used when working with and communicating about sensitive data

•   your expertise relevant to the solution you propose

*Note: Expertise described here could be real or hypothetical to fit the project topic you have created.*

B.  Write an executive summary directed to IT professionals that addresses *each*of the following requirements:

•   the decision support problem or opportunity you are solving for

•   a description of the customers and why this product will fulfill their needs

•   existing gaps in the data products you are replacing or modifying (if applicable)

•   the data available or the data that needs to be collected to support the data product lifecycle

•   the methodology you use to guide and support the data product design and development

•   deliverables associated with the design and development of the data product

•   the plan for implementation of your data product, including the anticipated outcomes from this development

•   the methods for validating and verifying that the developed data product meets the requirements and, subsequently, the needs of the customers

•   the programming environments and any related costs, as well as the human resources that are necessary to execute *each* phase in the development of the data product

•   a projected timeline, including milestones, start and end dates, duration for *each* milestone, dependencies, and resources assigned to *each* task

C.  Design and develop your fully functional data product that addresses your identified business problem or organizational need from part A. Include *each* of the following attributes, as they are the minimum required elements for the product:

•   **one** descriptive method and **one** nondescriptive (predictive or prescriptive) method

•   collected or available datasets

•   decision support functionality

•   ability to support featurizing, parsing, cleaning, and wrangling datasets

•   methods and algorithms supporting data exploration and preparation

•   data visualization functionalities for data exploration and inspection

•   implementation of interactive queries

•   implementation of machine-learning methods and algorithms

•   functionalities to evaluate the accuracy of the data product

•   industry-appropriate security features

•   tools to monitor and maintain the product

•   a user-friendly, functional dashboard that includes **three** visualization types

D.  Create *each* of the following forms of documentation for the product you have developed:

•   a business vision or business requirements document

•   raw and cleaned datasets with the code and executable files used to scrape and clean data (if applicable)

•   code used to perform the analysis of the data and construct a descriptive, predictive, or prescriptive data product

•   assessment of the hypotheses for acceptance or rejection

•   visualizations and elements of effective storytelling supporting the data exploration and preparation, data analysis, and data summary, including the phenomenon and its detection

•   assessment of the product’s accuracy

•   the results from the data product testing, revisions, and optimization based on the provided plans, including screenshots

•   source code and executable file(s)

•   a quick-start guide summarizing the steps necessary to install and use the product

E.  Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

F.  Demonstrate professional communication in the content and presentation of your submission.